

Remarks

The Examiner has objected to claims 22-25, 28, 31, 32, 38, and 40. These claims have been amended to overcome most of these objections. However, the applicant believes that no amendment is necessary to overcome objection c) in the examiner's office action.

In addition, the Examiner has rejected claims 44, 45, 48 and 49 under 35 U.S.C. 112 first paragraph.

Claim 44 has been amended to overcome this rejection.

The Examiner has rejected claims 22-24 as being unpatentable over U.S. Patent no. 5,329,352 to Jacobsen in view of U.S. Patent No. 5,903,688 to Englehart et al in view of the publication to Qian.

The Examiner has rejected claims 25 and 39 based on the above rejection to claim 22 in view of U.S. Patent no. 5,329,352 to Jacobsen in view of U.S. Patent No. 5,903,688 to Englehart et al in view of the publication to Qian and in further view of Chandé.

The Examiner has rejected claims 28, 31, 32, 35, 37, and 38 based on the above rejection to claim 22 in view of U.S. Patent no.

5,329,352 to Jacobsen in view of U.S. Patent No. 5,903,688 to Englehart et al in view of the publication to Qian and in further view of U.S. Patent Nos. 5,585,964 to Schaltz and 5,535,052 to Jorgens.

The Examiner has rejected claim 36 based on the above rejection to claim 22 in view of U.S. Patent no. 5,329,352 to Jacobsen in view of U.S. Patent No. 5,903,688 to Englehart et al in view of the publication to Qian and in further view of U.S. Patent No. 5,585,964 to Schaltz.

The Examiner has rejected claim 40 under 35 U.S.C. 103(a) in view of U.S. Patent no. 5,329,352 to Jacobsen in view of U.S. Patent No. 5,903,688 to Englehart et al in view of the publication to Qian and in further view of U.S. Patent Nos. 5,585,964 to Schaltz and 5,535,052 to Jorgens.

The Examiner has rejected claims 42, 43, 46 and 47 under 35 U.S.C. 103(a) in view of U.S. Patent no. 5,329,352 to Jacobsen in view of U.S. Patent No. 5,903,688 to Englehart et al in view of the publication to Qian and in further view of U.S. Patent Nos. 5,585,964 to Schaltz and 5,535,052 to Jorgens.

In view of the above amendments, and the following remarks,

the applicant hereby traverses the above rejections. In particular, for an Examiner to make an obvious type rejection, three criteria must be met 1) there must be some suggestion or motivation to combine the references; 2) there must be a reasonable expectation of success; 3) the prior art references must teach or suggest all of the claim limitations. See MPEP 2143.

The Court of Appeals for the Federal Circuit has also addressed the requirement that before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so..." In Re Jones, 958 F.2d 347, 21 U.S.P.Q. 2d 1941 (Fed Cir. 1992), See Also In Re Fine, 837 F.2d 1596, 1598-99 (Fed Cir. 1988). See also MPEP 2143.01 and In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). In Kotzab the court found that while the control of multiple valves by a single sensor rather than by multiple sensors was a "technologically simple concept," there was no finding "as to the specific understanding or principle within the knowledge of the skilled artisan" that would have provided the motivation to use a single sensor as the system to control more than one valve. 217 F.3d at 1371, 55 USPQ 2d at 1318.

It is respectfully submitted that there is no suggestion to combine the references of Jacobsen, Engelhardt et al and Qian

because these microscopes are all designed entirely different from each other. First, the disclosure of Jacobsen is directed towards a scanning microscope with an external spectrograph. This device is not able to perform FCS measurements without substantial design changes. For example, at least two time depending detector units must be installed to create a correlation measurement. It is respectfully submitted that no person skilled in the art would replace a photoelectric detector (11) as shown in Jacobsen, with a time depending detector as required for fluorescence correlation spectroscopy since photoelectric detector 11 is an intrinsic element of this Jacobsen microscope. This means that both time depending detector units must be installed at outlet 15 (See Fig. 1) which is the only optical connection for this Jacobsen microscope.

One requirement for an obviousness type rejection is that the proposed modification cannot change the principle of operation of a reference. See *In re Ratti* 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959) and also MPEP 2143.02. In the case of the Jacobsen reference, this microscope is directed towards an entirely different purpose than the claimed invention and by requiring the removal of the detector 11 that is required for performing the operation of the Jacobsen reference. Thus, this physical change would ultimately also change the principle operation of the

Jacobsen reference which was directed towards "a process for producing and correlating light microscope images and spectroscopic data.." as stated in col. 1 lines 6-8 of Jacobsen. This process would not be possible if the design of the Jacobsen reference was fundamentally altered as suggested by the Examiner.

Even if this microscope in Jacobsen is changed or modified to provide the a fluorescence correlation spectroscopy microscope of the present invention in claim 22, it will not provide the results that may be used for Fluorescence Correlation Spectroscopy (FCS) measurements. This is because the optical path between the dichroic beam splitter and the detector is much too long and unstable. Because of this instability, this will lead to correlated fluctuations within the measured light that are not caused by the molecules being observed. FIGS. 2 and 3 of Jacobsen show an optical fiber between the spectroscope and the optical outlet. In this view, any movement of this fiber such as due to vibration will lead to correlated fluctuations of light which would be detected as correlated fluctuations of the observed molecules. Thus, it is respectfully submitted that a person skilled in the art would not use this document to find a solution for FCS measurement.

It is respectfully submitted that the microscope of Jacobsen is therefore a "specialized" microscope and not a standard

microscope as described in Qian et al. This Jacobsen microscope is specialized for correlating light microscope images and spectroscopic data not a standard epifluorescence microscope images.

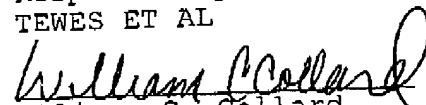
While Qian teaches using a standard microscope for FCS measurements, Qian does not teach in detail how a standard microscope is to be changed for FCS measurements. Qian only suggests to couple this device to a laser in confocal geometry. As stated above, for an Examiner to make an obviousness rejection, there must be a reasonable expectation of success. Because Qian would require undue experimentation to provide the device or solution disclosed in claim 22, it is respectfully submitted that claim 22 as amended is patentable over the above references.

Claims 23-25, 28, 31, 32, and 35-40 depend from claim 22 so therefore, it is respectfully submitted that these claims are patentable as well. In addition, because the Examiner has combined the Jacobsen reference with Qian and Engelhardt for the rejection of claims 42, 43, 46 and 47, it is respectfully submitted that these claims are patentable as well. This is because claims 42-47 are all directed towards a FCS module arrayed in a microscope and not towards the device disclosed in Jacobsen, Engelhardt et al or Qian or any obvious combination extending therefrom.

In conclusion, claims 22-25, 28, 31, 32, 38, 40, 42, and 44 have been amended. Claims 1-21, 26, 27, 29, 30, 33, 34, and 41 have been canceled without prejudice. Claims 22-25, 28, 31, 32, 34-40 and 42-49 remain in the application.

Early allowance of the remaining claims is respectfully requested.

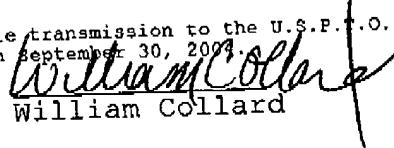
Respectfully submitted,  
TEWES ET AL

  
Allison C. Collard  
William C. Collard Reg. 38,411  
Edward R. Freedman

COLLARD & ROE, P.C.  
1077 Northern Boulevard  
Roslyn, New York 11576  
(516) 365-9802

Attorneys for Applicant

I hereby certify that this correspondence is being sent by facsimile transmission to the U.S.P.T.O. to Patent Examiner Shun Lee at Group No.2371, to 1-703-872-9306 on September 30, 2004.

  
William Collard

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